

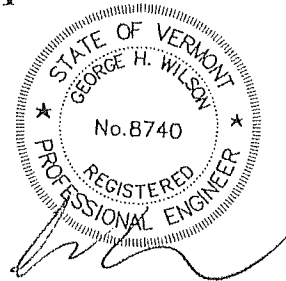
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## J. A. McDONALD, INC.

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P.O. Box 132, Lyndon Center, VT 05850 (802) 626-5201  
E-Mail jamcdonaldinc@charter.net

### CLARENDON BRO 1443 (48) Erosion Prevention & Sediment Control Plan



J.A. McDonald, Inc has reviewed the contract Erosion Prevention and Sediment Control Plans included in the contract documents, and accepts them as our EPSC documents for this project with the following additions/clarifications.

#### Sequence and Staging

##### Construction Sequence

The construction sequence for this project is reflected in the project's construction schedule attached and is outlined in the Contract Documents. Any changes in the general sequence will be coordinated through the Resident Engineer.

1. During the mobilization process, and before any earth disturbance commences, the perimeter demarcation and perimeter controls will be installed as outlined in the EPSC Plans.
2. Throughout the construction process, and until final stabilization is achieved as agreed to by the Resident Engineer and the On-Site Plan Coordinator, the perimeter controls will be properly maintained.
3. Construction entrances will be constructed and maintained as necessary throughout the construction process as field determined by the On-site Plan Coordinator and the Resident Engineer, to prevent tracking of soils onto adjacent travel way.
4. Exposed soils will be stabilized as work progresses, in accordance with The Low Risk Site Handbook and contract documents. Temporary stabilization measures will be maintained until final stabilization is achieved as mutually agreed to between the Resident Engineer and the On-Site Plan Coordinator.
5. Our schedule shows the anticipated dates for all in-stream work. Materials necessary to perform the work will be readily available, or on site before the work begins.
6. Temporary Relocation of Stream Plan has been prepared to allow for the removal of the existing substructure and reconstruction of the existing channel bed.
7. Prior to demolition of the existing superstructure, concrete blocks, steel beams and plates will be installed under the structure to prevent any debris from entering the Clarendon River.
8. All temporary stabilization measures will be maintained until final stabilization is achieved, at which point temporary EPSC measures will be removed.

#### Off-Site Activities

Off site activities such as laydown areas, waste and borrow areas will be submitted on, at a later date.

#### Updates

Should field conditions warrant a change to the EPSC plans, they will be updated to reflect the changes. A master EPSC plan set with revisions will be maintained on site for the duration of the project.

#### Contact Information

The superintendent (Chris Davidson) will be the On-Site Plan Coordinator and the primary contact for all erosion prevention, sediment control and environmental activities. Chris's primary contact information is Cell 802-535-7313, e-mail [chrisd@jamcdonald.com](mailto:chrisd@jamcdonald.com).

This plan was prepared by Marc Boudreau of J.A. McDonald, Inc. and Joey Wilson, P.E. of Wilson Consulting Engineers, PLC whose qualifications are attached for your review. Joey's primary contact information is 802-472-3960

#### Schedule


The project construction schedule is attached for your review.

#### Inspection Form


J.A. McDonald will utilize the attached VT AOT EPSC Plan Inspection Report for Low Risk Projects.

#### Other

Permit issued for this project and contract requirements will be strictly adhered to for this project.

 Vermont Agency of Transportation			2015 EPSC Plan Inspection Report (Non-Jurisdictional and Low Risk Projects)			
Project Name:			Date:		Time Since Last Storm:	
Inspector:			On-Site Coordinator: (signature required)			
Measure Inspected	Y	N	STA/Off	Corrective Action (CA) Required	Date CA Occurred	
<b>Boundary Limits</b>						
Site boundary markers are up and visible						
Disturbance is only occurring within marked boundaries						
<b>Disturbance Area Limit</b>						
Only acreage listed on <i>Authorization to Discharge</i> is disturbed at one time						
<b>Stabilized Construction Entrance/Exit</b>						
Off-site tracking of sediment prevented						
<b>Sediment Barriers</b>						
Measure has been installed properly and is functioning as designed						
Accumulated sediment < ½ height of measure						
<b>Diversion</b>						
Upland stormwater is diverted around the work area						
<b>Channelized Runoff</b>						
Check structures are in place, extend the width of the channel, and have capacity to retain sediment in the next storm event						
Channels are stable with no erosion						
<b>Exposed Soils Stabilization</b>						
Seed and mulch, and/or matting placed in accordance w/ permit requirements and/or Specifications						
Soil is seeded and mulched or covered in erosion matting within 48 hours of final grade						
<b>Winter Stabilization</b>						
After Sept. 15 all disturbed areas are seeded & mulched to 3" deep or covered w/ matting						
For ongoing construction, exposed soil is mulched prior to forecasted events						
<b>Dewatering Treatment</b>						
Measure is preventing a discharge of turbid water from leaving the site						
Accumulated sediment is removed to allow sufficient treatment						

\* Additional Measures and Discharges shall be reported on the back side of this form.

 Vermont Agency of Transportation			EPSC Plan Inspection Report (Non-Jurisdictional and Low Risk Projects)			
Measure Inspected	Y	N	STA/Off	Corrective Action	Date Taken	
Additional Measures						
Discharges Noted						

\* If there is a discharge of visibly discolored stormwater from the construction site to waters of the state, the On-Site Plan Coordinator shall inform the Resident Engineer and take corrective action and report the discharge in accordance with Section 6.1 of Permit 3-9020.

Joey Wilson P.E.  
EPSC Plan Preparer Qualifications:

Vermont AOT Relevant Experience

- VT AOT Project Bristol STP F 021-1(15) – Prepared Contractor EPSC Plans & Traffic Control Plans, 2013.
- VT AOT Project Brighton ER STP 034-3(25) – Prepared Contractor EPSC Plans & Traffic Control Plans, 2013.
- VT AOT Project Essex Town STP 5400 (5) – Prepared Contractor EPSC Plans including staging and waste areas, 2013.
- VT AOT Project Maldstone STP 0271(20) – Prepared Contractor EPSC Plans, 2013
- VT AOT Project Hubbardton ER STP 0161 (26) (27) – Prepared Contractor EPSC Plans, 2012
- VT AOT Project Montpelier FEGC 028-3(34)5 – On-site Plan Coordinator & Proj Manager, 2009
- VTAOT Project Brandon NH 019-3(495)- Prepared Contractor EPSC Plans & Traffic Control Plans, 2009

Other Relevant Experience

- Environmental Specialist for the Kingdom Community Wind Farm in Lowell, VT, 2011-Present  
On-site representative/specialist for the Vermont Department of Environmental Conservation and Army Corps of Engineers. Worked to ensure permit compliance, and made EPSC Plan modifications as field conditions warranted. Representation and oversight of all environmental and civil construction activities.  
The development was inclusive of a 63 megawatt, 21 turbine wind farm. Supporting construction included an operations and maintenance building, a new substation, 7.1 miles of roadway and turbine pads with a cut-to fill balance of nearly 600,000 cy of rock excavation and 150,000 cy of earth excavation.
- Project Manager, West Street Reconstruction and Stream Relocation Project Brookfield, Vermont  
Project Manager for the reconstruction of West Street and adjoining stream through Randolph, Brookfield, and Braintree, Vermont. Responsible for all on-site operations, including Erosion Protection and Sediment Control, bypass pumping operations to perform excavation work in the active stream, and day-to-day construction operations. Worked with the Owner and the Agency of Natural Resources to ensure permit compliance was being met. Brought the project to completion in 12 weeks.
- Project Engineer/Resident Engineer, Stowe Mountain Resort Infrastructure Package, Stowe, VT  
Responsible for the site-specific construction stormwater permit, and on-site permit compliance. Coordination between the owner, contractor, and the Agency of Natural Resources. Additional design responsibilities included permitting and sizing of utilities inclusive of stormwater, sanitary sewer, and water supply.

Education

- o University of Vermont, Bachelor of Science, Civil Engineering, Magna Cum Laude - 2002
- o Vermont Technical College, AS Civil and Environmental Engineering Technology - 1999

GENERAL INFORMATION

SYMBOLOLOGY LEGEND NOTE

THE SYMBOLOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOLOGY. THE SYMBOLOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
▣	BNDNS BOUND TO BE SET
●	IPNS IRON PIN SET
⊙	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT CODE	DESCRIPTION
#	APL BOUND APPARENT LOCATION
□	BM BENCHMARK
■	BND BOUND
▣	CB CATCH BASIN
⊕	COMB COMBINATION POLE
▣	DITHR DROP INLET THROATED DNC
⊕	EL ELECTRIC POWER POLE
○	FPOLE FLAGPOLE
⊙	GASFIL GAS FILLER
⊙	GP GUIDE POST
■	GSO GAS SHUT OFF
○	GUY GUY POLE
○	GUYW GUY WIRE
■	GV GATE VALUE
⊕	H TREE HARDWOOD
△	HCTRL CONTROL HORIZONTAL
△	HVCTRL CONTROL HORIZ. & VERTICAL
⊕	HYD HYDRANT
○	IP IRON PIN
○	IPIPE IRON PIPE
⊕	LI LIGHT - STREET OR YARD
⊕	MB MAILBOX
○	MH MANHOLE (MH)
□	MM MILE MARKER
○	PM PARKING METER
○	PMK PROJECT MARKER
○	POST POST STONE/WOOD
⊕	RRSIG RAILROAD SIGNAL
⊕	RRSL RAILROAD SWITCH LEVER
⊕	S TREE SOFTWOOD
⊕	SAT SATELLITE DISH
⊕	SHRUB SHRUB
⊕	SIGN SIGN
⊕	STUMP STUMP
⊕	TEL TELEPHONE POLE
○	TIE TIE
⊕	TSIGN SIGN W/DOUBLE POST
⊕	VCTRL CONTROL VERTICAL
○	WELL WELL
■	WSO WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOLOGY

UNDERGROUND UTILITIES	
— UGU —	UTILITY (GENERIC-UNKNOWN)
— UT —	TELEPHONE
— UE —	ELECTRIC
— UC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEP.
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— AGU —	UTILITY (GENERIC-UNKNOWN)
— T —	TELEPHONE
— E —	ELECTRIC
— C —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
— — —	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOLOGY

— — — CZ — — —	CLEAR ZONE
— — — — —	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△ — △ — △ — △	TOP OF CUT SLOPE
○ — ○ — ○ — ○	TOE OF FILL SLOPE
⊕ — ⊕ — ⊕ — ⊕	STONE FILL
— — — — —	BOTTOM OF DITCH
— — — — —	CULVERT PROPOSED
— — — — —	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — BF —	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOLOGY

BOUNDARY LINES	
—————	TOWN BOUNDARY LINE
—————	COUNTY BOUNDARY LINE
—————	STATE BOUNDARY LINE
———	PROPOSED STATE R.O.W. (LIMITED ACCESS)
———	PROPOSED STATE R.O.W.
———	STATE ROW (LIMITED ACCESS)
———	STATE ROW
———	TOWN ROW
— · — · — · — · —	PERMANENT EASEMENT LINE (P)
— · — · — · — · —	TEMPORARY EASEMENT LINE (T)
— + — + — + — + —	SURVEY LINE
$\frac{P}{L}$ — $\frac{P}{L}$ —	PROPERTY LINE (P/L)
△ — SR — △ — SR — △ — SR —	SLOPE RIGHTS
6f — — — — — 6f —	6F PROPERTY BOUNDARY
4f — — — — — 4f —	4F PROPERTY BOUNDARY
HAZ — — — — — HAZ —	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOLOGY

EPSC MEASURES	
ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— X — X — X — X — X —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
▣	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOLOGY

ENVIRONMENTAL RESOURCES

— — — — —	WETLAND BOUNDARY
— · — · — · — · —	RIPARIAN BUFFER ZONE
— · — · — · — · —	WETLAND BUFFER ZONE
— · — · — · — · —	SOIL TYPE BOUNDARY
— T&E —	THREATENED & ENDANGERED SPECIES
HAZ — HAZ —	HAZARDOUS WASTE AREA
— AG —	AGRICULTURAL LAND
— HABITAT —	FISH & WILDLIFE HABITAT
— FLOOD PLAIN —	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
— — — — —	USDA FOREST SERVICE LANDS
— · — · — · — · —	WILDLIFE HABITAT SUIT/CONN

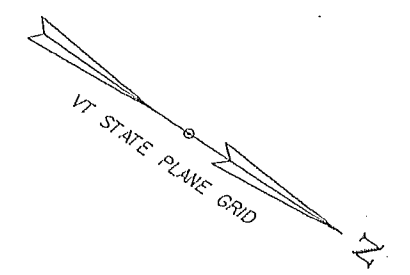
ARCHEOLOGICAL & HISTORIC

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOLOGY

EXISTING FEATURES	
— — — — —	ROAD EDGE PAVEMENT
— — — — —	ROAD EDGE GRAVEL
— — — — —	DRIVEWAY EDGE
— — — — —	DITCH
— — — — —	FOUNDATION
x — x — x — x — x —	FENCE (EXISTING)
□ — □ — □ — □ — □ —	FENCE WOOD POST
○ — ○ — ○ — ○ — ○ —	FENCE STEEL POST
— — — — —	GARDEN
— — — — —	ROAD GUARDRAIL
	RAILROAD TRACKS
— — — — —	CULVERT (EXISTING)
— — — — —	STONE WALL
— — — — —	WALL
— — — — —	WOOD LINE
— — — — —	BRUSH LINE
— — — — —	HEDGE
— — — — —	BODY OF WATER EDGE
— — — — —	LEDGE EXPOSED

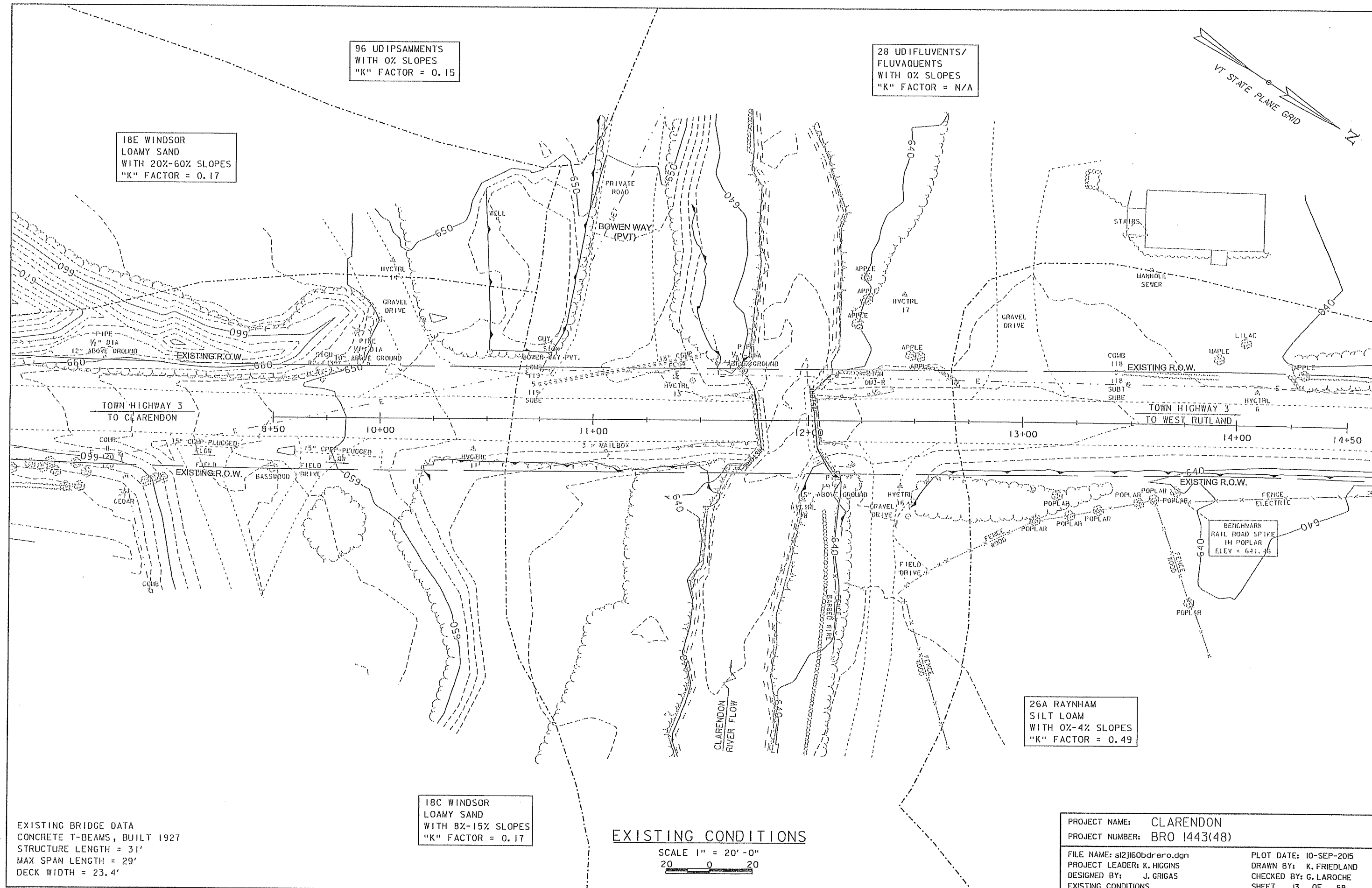
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)
FILE NAME:	I2JIG0/sl2JIG0legend.dgn
PROJECT LEADER:	K. HIGGINS
DESIGNED BY:	J. GRIGAS
LEGEND SHEET	
PLOT DATE:	10-SEP-2015
DRAWN BY:	K. FRIEDLAND
CHECKED BY:	G. LAROCHE
SHEET	II OF 59



96 UDIPSAMMENTS  
WITH 0% SLOPES  
"K" FACTOR = 0.15

28 UDIFLUENTS/  
FLUVAQUENTS  
WITH 0% SLOPES  
"K" FACTOR = N/A

18E WINDSOR  
LOAMY SAND  
WITH 20%-60% SLOPES  
"K" FACTOR = 0.17



EXISTING BRIDGE DATA  
CONCRETE T-BEAMS, BUILT 1927  
STRUCTURE LENGTH = 31'  
MAX SPAN LENGTH = 29'  
DECK WIDTH = 23.4'

18C WINDSOR  
LOAMY SAND  
WITH 8%-15% SLOPES  
"K" FACTOR = 0.17

EXISTING CONDITIONS

SCALE 1" = 20'-0"  
20 0 20

26A RAYNHAM  
SILT LOAM  
WITH 0%-4% SLOPES  
"K" FACTOR = 0.49

PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: sl2j60drero.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: K. FRIEDLAND
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
EXISTING CONDITIONS	SHEET 13 OF 59

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 11 WITH RELATED APPROACH AND CHANNEL WORK. BRIDGE 11 WILL BE REPLACED WITH A PRECAST STRUCTURE. THE PROJECT IS LOCATED IN THE TOWN OF CLARENDON, VT ON TOWN HIGHWAY 3 (WALKER MOUNTAIN ROAD) 1.05 MILES SOUTH OF THE INTERSECTION WITH VT RT 133.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.45 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS MOUNTAINOUS AND MOSTLY FORESTED WITH RIPARIAN VEGETATION AND TREES.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE CLARENDON RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS AND ALLUVIAL WITH A CONFINED CHANNEL AT THE SITE. THE STREAM BED CONSISTS OF SAND AND GRAVEL.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF SMALL DIAMETER TREES. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF RUTLAND, VERMONT.

WINDSOR LOAMY SAND	20%-60% SLOPES	"K" FACTOR = 0.17
WINDSOR LOAMY SAND	8%-15% SLOPES	"K" FACTOR = 0.17
RAYNHAM SILT LOAM	0%-4% SLOPES	"K" FACTOR = 0.49
UDIFLUVENTS/ FLUVAQUENTS	0% SLOPES	"K" FACTOR = N/A
UDIPSAMMENTS	0% SLOPES	"K" FACTOR = 0.15

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:  
0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: YES  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NORTHERN LONG-EARED BAT  
WATER RESOURCE: CLARENDON RIVER  
WETLANDS: YES (SEE PLANS)

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

BARRIER FENCE SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

PROJECT DEMARCATION FENCE SHALL BE PLACED TO VISIBLY DEPICT LIMITS OF CLEARING. THE PROJECT DEMARCATION FENCE MUST BE PLACED AND APPROVED BY THE RESIDENT ENGINEER PRIOR TO ANY CLEARING ACTIVITIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

FILTER CURTAIN WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

IT IS NOT ANTICIPATED THAT CHECK STRUCTURES WILL BE NECESSARY.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

THERE ARE NO PERMANENT STORM WATER TREATMENT DEVICES ANTICIPATED ON THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

TREATMENT OF DEWATERING DISCHARGE IS NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

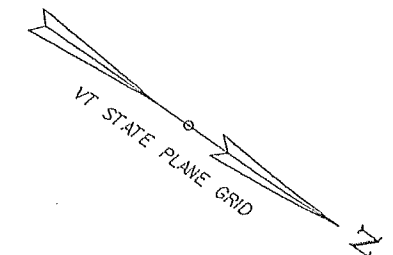
1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES  
IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29.

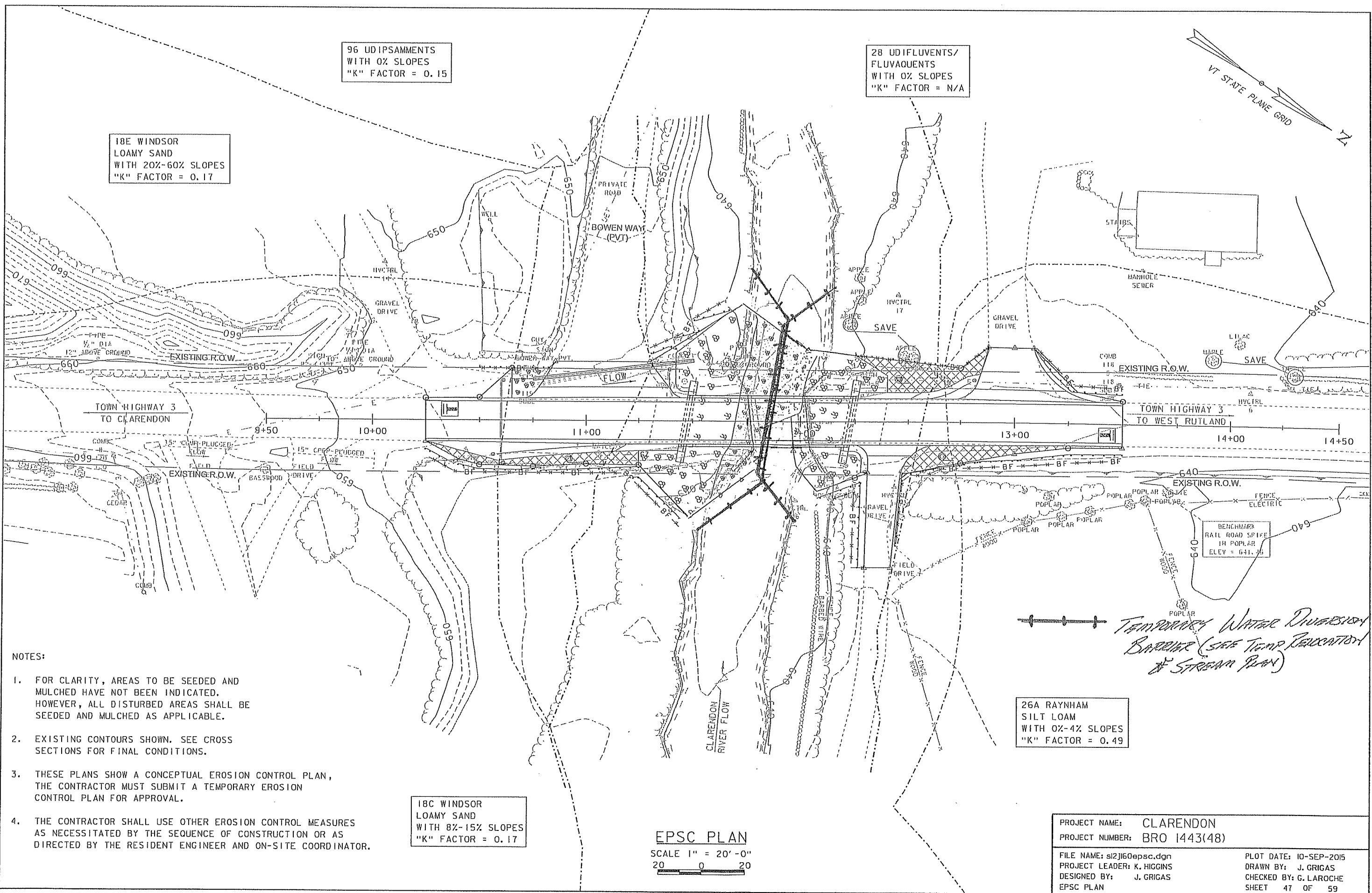
PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: sl2j160epsc_nar	PLOT DATE: 08-OCT-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
EPSC NARRATIVE	SHEET 46 OF 59



96 UDIPSAMMENTS  
WITH 0% SLOPES  
"K" FACTOR = 0.15

28 UDIFLUENTS/  
FLUVAQUENTS  
WITH 0% SLOPES  
"K" FACTOR = N/A

18E WINDSOR  
LOAMY SAND  
WITH 20%-60% SLOPES  
"K" FACTOR = 0.17



NOTES:

1. FOR CLARITY, AREAS TO BE SEEDDED AND MULCHED HAVE NOT BEEN INDICATED. HOWEVER, ALL DISTURBED AREAS SHALL BE SEEDDED AND MULCHED AS APPLICABLE.
2. EXISTING CONTOURS SHOWN. SEE CROSS SECTIONS FOR FINAL CONDITIONS.
3. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
4. THE CONTRACTOR SHALL USE OTHER EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON-SITE COORDINATOR.

18C WINDSOR  
LOAMY SAND  
WITH 8%-15% SLOPES  
"K" FACTOR = 0.17

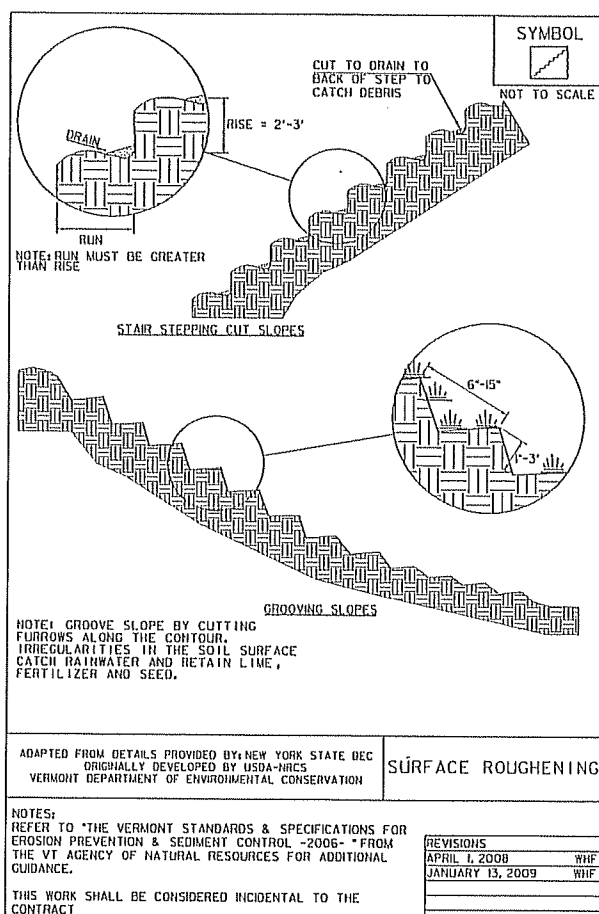
EPSC PLAN  
SCALE 1" = 20'-0"  
20 0 20

TEMPORARY WATER DIVERSION  
BARRIER (SEE TEMP EROSION  
CONTROL PLAN)

26A RAYNHAM  
SILT LOAM  
WITH 0%-4% SLOPES  
"K" FACTOR = 0.49

PROJECT NAME: CLARENDON	
PROJECT NUMBER: BRO 1443(48)	
FILE NAME: si2j160epsc.dgn	PLOT DATE: 10-SEP-2015
PROJECT LEADER: K. HIGGINS	DRAWN BY: J. GRIGAS
DESIGNED BY: J. GRIGAS	CHECKED BY: G. LAROCHE
EPSC PLAN	SHEET 47 OF 59





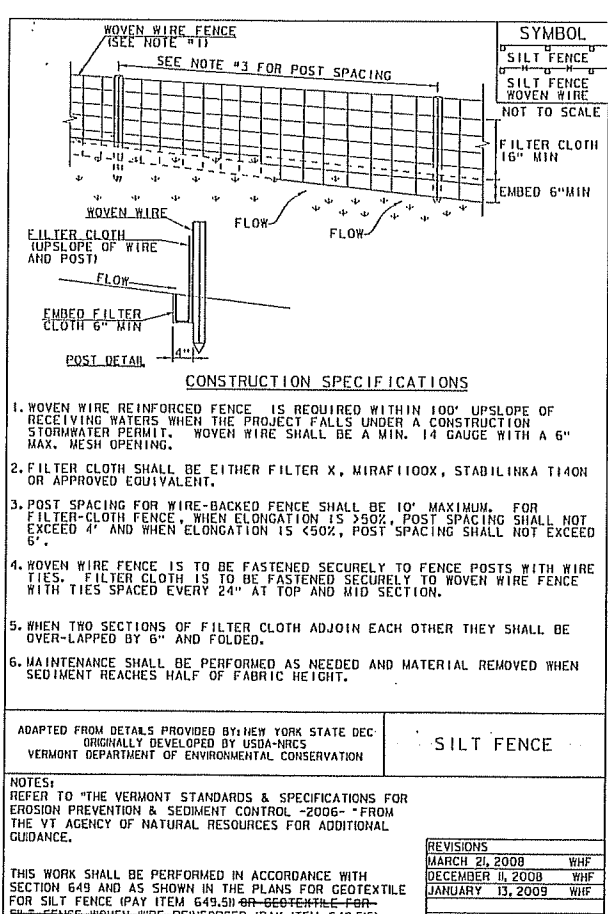
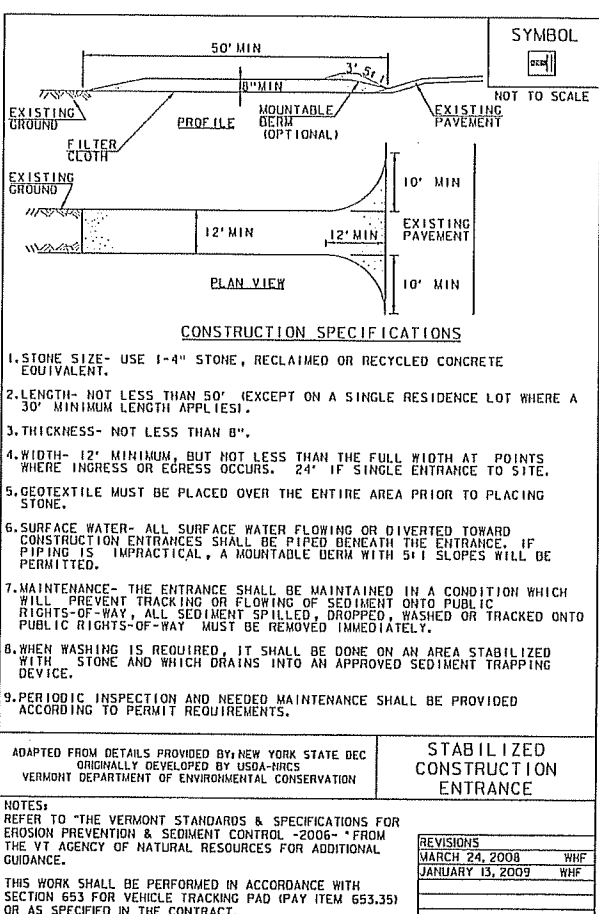
VAOY RURAL AREA MIX						
LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREeping RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%		6	RED TOP	AGHOSIS GIGANTEA	98%	93%
5.0%		9	WHITE FIELD CLOVER	TRICHOFLORUS REPENS	85%	98%
5.0%		6	ARRRAL RYE GRASS	COULMA XALPYFIDORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

## CONSTRUCTION GUIDANCE

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEEDING AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES		TURF ESTABLISHMENT	
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)		REVISIONS JANUARY 12, 2015    WHF	



PROJECT NAME:	CLARENDON
PROJECT NUMBER:	BRO 1443(48)

FILE NAME: sl2j160ero\_det.dgn  
PROJECT LEADER: K. HIGGINS  
DESIGNED BY: J. GRIGAS  
EPSC DETAILS

PLOT DATE: 10-SEP-2015  
DRAWN BY: J. GRIGAS  
CHECKED BY: G. LAROCHE  
SHEET 48 OF 59



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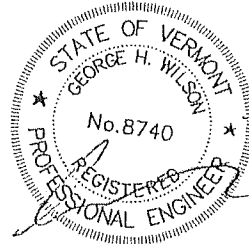
## J. A. McDONALD, INC.

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P.O. Box 132, Lyndon Center, VT 05850 (802) 626-5201  
E-Mail [jamedonaldinc@charter.net](mailto:jamedonaldinc@charter.net)

### CLARENDOMN BRO 1443 (48)

#### TEMPORARY RELOCATION of STREAM PLAN



The temporary relocation of Clarendon River will be required to reconstruct the stream/river channel as shown in the contract documents. Construction activities associated with channel reconstruction include installation of diversion barrier, removal of existing substructure, unclassified channel excavation, stone fill, special provision stream bed material.... This work will be completed in phases to allow for uninterrupted stream flow and permit excavation and installation of stone fills within a confined/isolated area.

In-stream construction is restricted to the period from July 1<sup>st</sup> through Oct. 1<sup>st</sup>. In-stream work will be limited to this period and scheduled for periods of low flow. Extended weather forecast will be consulted prior to in-stream construction to ensure a period of little or no precipitation is forecasted. In-stream activities will be suspended if an unanticipated storm event produces flows which exceed twice the average daily flow.

Prior to construction activities on the above referenced project, JA McDonald will install perimeter erosion control measures/devices as shown in the ESPC Plan. Barrier fence will be installed to delineate environmental sensitive areas to ensure these areas are not disturbed.

#### PHASE I

Subsequent to the removal of the existing bridge superstructure, the Clarendon River will be diverted/channeled to the northern portion of the channel. A diversion barrier consisting of poly lined traffic barriers/sandbags will be installed as shown in the Phase I plan. Substructure removal, unclassified channel excavation will be disposed of at an approved off-site waste area, some of the excavations will also be used to supplement the stream bedding material. Stone fill and stream bed material will be placed to elevations/limits shown in the contract documents. Following placement of the channel material the reconstructed channel will be slowly "wetted" to minimize the effects of the initial sediment pulse.

#### PHASE II

In this phase the Clarendon River will be diverted/channeled to the previously Phase I reconstructed channel on the south side. The diversion barrier used in Phase I will be relocated as shown in the Phase II plan. Substructure removal, unclassified channel excavation, stone fill and stream bed material will be constructed to elevations/limits shown in the contract documents. Following placement of the channel material the reconstructed channel will be slowly "wetted" to minimize the effects of the initial sediment pulse.

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### CLARENDOMN BRO 1443 (48)

#### TEMPORARY RELOCATION of STREAM PLAN Sequencing/Phases

##### Pre-Construction

- Submit & Obtain Approval of Temporary Relocation of Stream Plan
- Submit & Obtain Approval of Erosion Protection Sediment Control Plan
- Submit US Army Corp Work Start Notification Form
- On-Site Preconstruction Conference with River Management Engineer (Jaron Borg)
- Submit Off-Site Activity Report for Staging, Stockpile, Waste & Borrow Sites

##### Pre-Phased Construction

- Install Construction Approach Signage
- Install EPSC Perimeter Controls
  - Install Demarcation/Barrier Fence
  - Install Silt Fence
  - Install Vehicle Tracking Pads
- Inspect & Clean/Repair Equipment for Soil/Vegetation , Hydraulic/Fuel Leaks
- Ensure Equipment and Material availability
- Monitor Weather Forecast for inclement conditions
- Maintain EPSC measures installed
- Remove existing bridge super/substructure

##### Phase I Temporary Relocation of Stream/Stream Bed Reconstruction

- Monitor Weather Forecast for inclement conditions
- Maintain EPSC measures install in Pre-Phased Construction
- Install Water Diversion Barrier
- Unclassified Channel Excavation/Substructure Removal
- Install Stone Fill and Special Provision Stream Bed Material
- Install Grubbing Material above OHW, Seed and Mulch

##### Phase II Temporary Relocation of Stream/Stream Bed Reconstruction

- Monitor Weather Forecast for inclement conditions
- Maintain EPSC measures install in Pre-Phased & Phase I Construction
- Reset Water Diversion Barrier
- Unclassified Channel Excavation/Substructure Removal
- Install Stone Fill and Special Provision Stream Bed Material
- Install Grubbing Material above OHW, Seed and Mulch

The following supplemental narrative has been prepared in response to comments received by Josh Carvajal, ANR River Management Engineer. (reference e-mail dated 2/24/16)

**Stream Bed Material, Placement and “Wetting” Process:**

Stream bed material will be blasted, angular rock supplemented with material excavated from the existing channel. Prepared material will be approved by the Engineer and Agency of Natural Resources prior to placement. Stream bed material will be of a gradation to conform to the project specifications.

Stream bed material shall be installed to create a homogenous mass without causing segregation. Voids in the stone mass will be filled with a mixture of native finer material excavated from the existing stream bed. This material will be hand tamped with metal rods, plate tamper and water pressure to ensure all voids are filled. Properly placed stream bed material shall result in stream flows at the surfaces versus subsurface flows.

“Wetting” of the reconstructed channel will be done **slowly** to minimize the effects of the initial sediment pulse. Temporary stone check dams will be installed in the lower portion of the reconstructed channel to filter flows during the wetting process. Water will be pumped from the Clarendon River or an isolated upstream point in the diversion barrier will be breached to allow “controlled” flow into the reconstructed channel area. The reconstructed channel will be monitored during the wetting process for signs of turbidity. If in the process of wetting the channel, sediment laden flows are observed, flows coming into the reconstructed area will be reduced or terminated to allow for settlement. The wetting process as noted above will be repeated until flows in the reconstructed channel are clear.

**Diversion Barrier:**

As noted in the previous submittal, it is JA McDonald’s intent to schedule and reconstruct the stream bed channel during a period of low flow. Prior to installation of the diversion barrier the existing stream channel will be surveyed to determine stream depth. As noted in the review comments the existing channel bottom is such that a pool has formed in the vicinity of the existing structure. The removal of the existing super/substructure (channel width confined by existing abutments) which has restricted the channel may create some relief in this area. It still may be necessary to install large sand bags in the pool area prior to installation of the poly lined traffic barriers, to ensure freeboard.

JA McDonald did consider leaving the center portion of the diversion barrier in place for both phases of channel reconstruction, however, were uncertain how the center portion (area beneath the diversion barrier itself) of the channel would be reconstructed.

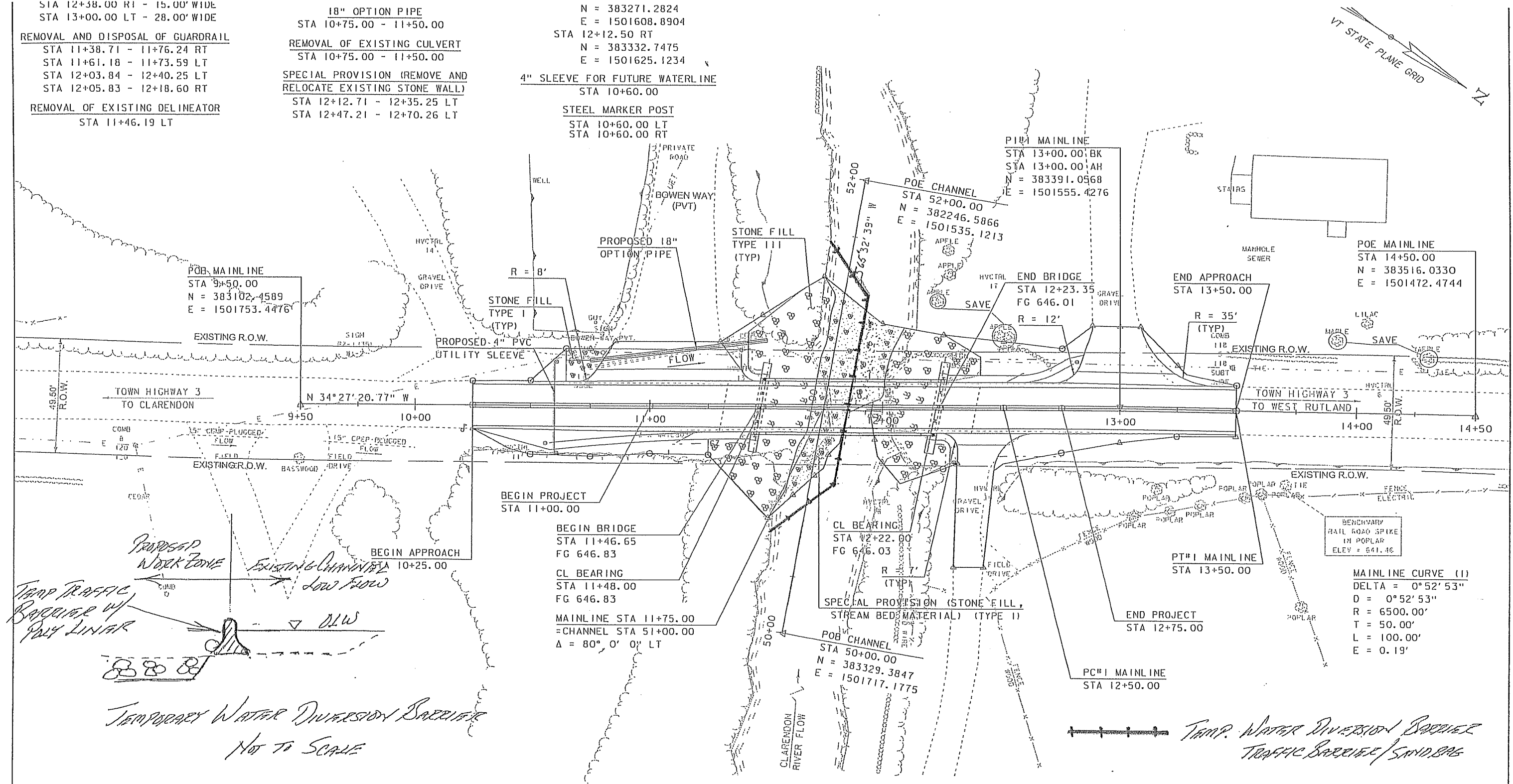
**Stone Fill Stream Bed Material:**

Attached for your review are the Special Provision specifications for the proposed Stone Fill Stream Bed Material.

STA 12+38.00 RI - 15.00' WIDE  
 STA 13+00.00 LT - 28.00' WIDE  
 REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA 11+38.71 - 11+76.24 RT  
 STA 11+61.18 - 11+73.59 LT  
 STA 12+03.84 - 12+40.25 LT  
 STA 12+05.83 - 12+18.60 RT  
 REMOVAL OF EXISTING DELINEATOR  
 STA 11+46.19 LT

18" OPTION PIPE  
 STA 10+75.00 - 11+50.00  
 REMOVAL OF EXISTING CULVERT  
 STA 10+75.00 - 11+50.00  
 SPECIAL PROVISION (REMOVE AND  
 RELOCATE EXISTING STONE WALL)  
 STA 12+12.71 - 12+35.25 LT  
 STA 12+47.21 - 12+70.26 LT

N = 383271.2824  
 E = 1501608.8904  
 STA 12+12.50 RT  
 N = 383332.7475  
 E = 1501625.1234  
 4" SLEEVE FOR FUTURE WATERLINE  
 STA 10+60.00  
 STEEL MARKER POST  
 STA 10+60.00 LT  
 STA 10+60.00 RT



PHASE I TEMPORARY RELOCATION OF STREAM  
 SCALE 1" = 40'

STA 12+38.00 RT - 15.00' WIDE  
 STA 13+00.00 LT - 28.00' WIDE

REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA 11+38.71 - 11+76.24 RT  
 STA 11+61.18 - 11+73.59 LT  
 STA 12+03.84 - 12+40.25 LT  
 STA 12+05.83 - 12+18.60 RT

REMOVAL OF EXISTING DELINEATOR  
 STA 11+46.19 LT

18" OPTION PIPE  
 STA 10+75.00 - 11+50.00

REMOVAL OF EXISTING CULVERT  
 STA 10+75.00 - 11+50.00

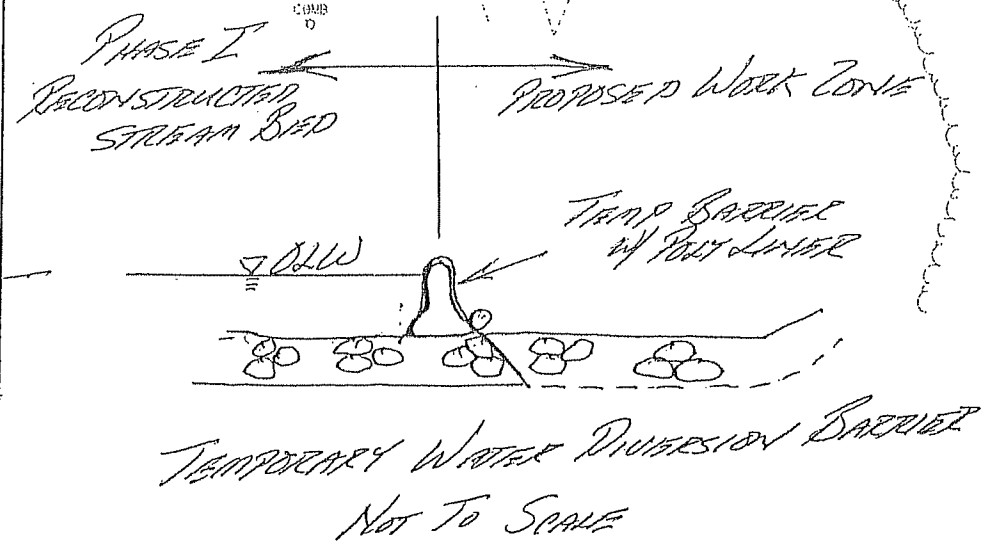
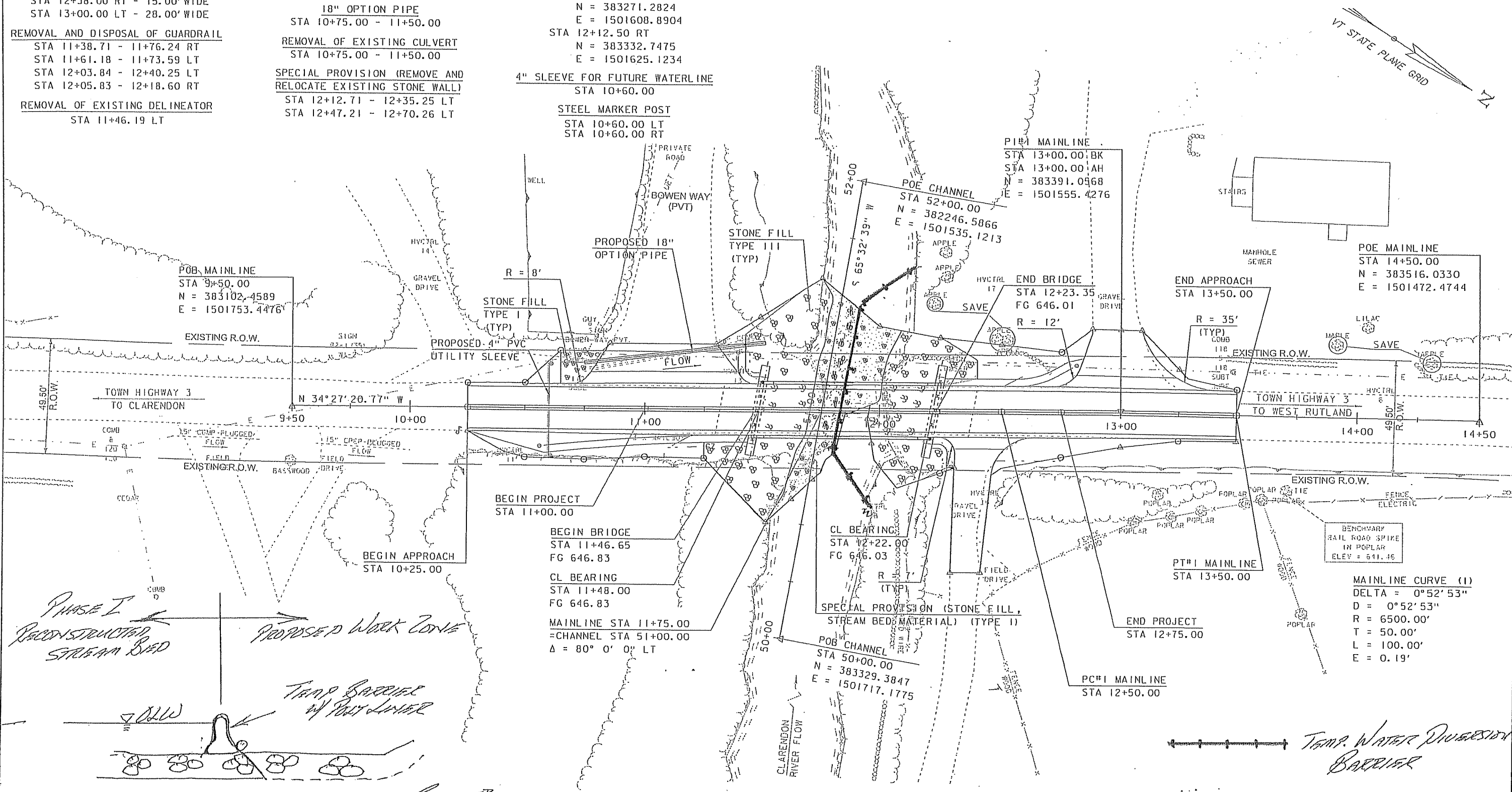
SPECIAL PROVISION (REMOVE AND RELOCATE EXISTING STONE WALL)  
 STA 12+12.71 - 12+35.25 LT  
 STA 12+47.21 - 12+70.26 LT

N = 383271.2824  
 E = 1501608.8904

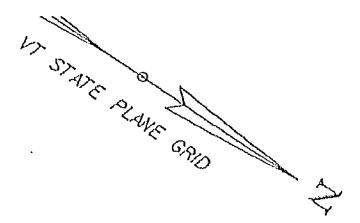
STA 12+12.50 RT  
 N = 383332.7475  
 E = 1501625.1234

4" SLEEVE FOR FUTURE WATERLINE  
 STA 10+60.00

STEEL MARKER POST  
 STA 10+60.00 LT  
 STA 10+60.00 RT



PHASE II TEMPORARY RELOCATION OF STREAM  
 SCALE 1" = 40'



MAINLINE CURVE (1)  
 DELTA = 0°52'53"  
 D = 0°52'53"  
 R = 6500.00'  
 T = 50.00'  
 L = 100.00'  
 E = 0.19'

Temp. Water Diversion Barrier

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### CLARENDON BRO 1443 (48)

#### Construction Schedule Narrative REV2.0

J. A. McDonald, Inc. has been awarded a contract by the State of Vermont to replace Bridge #11 on Walker Mountain Road (TH3) in Clarendon, VT. This project has been designed under VTran's accelerated bridge program. This project has a very aggressive construction schedule. VTrans has made provisions for a Bridge Closure Period (BCP) not to exceed 28 consecutive calendar days, to occur between the dates of June 20<sup>th</sup> and August 19<sup>th</sup> of 2015.

A critical element in the preparation of the attached schedule is the availability and coordination of precast components (Abutments, Wingwalls, Prestressed NEXT Beams). Fabrication of precast components including prestressed NEXT Beams will be provided by, JP Carrara & Sons. Other critical elements are crane availability, subcontractor coordination, project access/constraints, pre-excavation of earth/rock for pile installation...

JA McDonald has shown in the attached schedule mobilization, perimeter erosion controls and clear/grub operations occurring in early April. Special Provision 16 Environmental, restricts cutting of NLEB habitat trees which have been identified between April 15 through August 31. Following clearing operation (prior to April 15<sup>th</sup>) a temporary shutdown will precede the allowed BCP. Seven days prior to the BCP and demolition of the existing bridge, the State will do a bat habitat inspection and historical documentation of the existing structure. The implementation of the BCP is dependent upon the fabrication (approved for shipment) of the precast components. The schedule has established a 28 day BCP commencing on July 11<sup>th</sup> and extending to August 8<sup>th</sup>.

The two weeks prior to the BCP, JA McDonald will pre-excavate and install/drive the abutment piles. Piles at abutment two will be pre-excavated prior to the piles being installed. Casings will be augered/pre-bored to depth specified or to ledge with a 3' minimum drilled embedment, piles installed and backfilled. JA McDonald request that piles at abutment one be driven from existing ground to facilitate maintenance of traffic, and expedite pile driving operations. It is my understanding that this method has been allowed and successful on similar VAOT projects.

The attached schedule is based on a 12 hour work day, six days per week during the BCP. JA McDonald does not anticipate "night work" being required. This does not preclude the contractor from working longer days, Sundays and/or "night work" to maintain or accelerate the schedule. In the initial BCP multiple crews are scheduled to excavate, remove existing structure/abutments, complete channel/streambed reconstruction and stone fills. An 8 man crew is scheduled to set precast components, and form/pour concrete closure pours and combination concrete galv. steel bridge rail.

There are contraction activities/"task" which exceed the 1day/12 hour period during the BCP. These tasks (Activity ID #55,59,66 &70) are primarily related to the concrete cure for the Rapid Set and Class A concrete. The begin and end Bridge Closure Period (Activity ID #36 & #86) have been included as constraints to reflect the 28 day BCP. In general, activities have been link finish to start, with some items having lag/lead times.

As noted above, this is a very aggressive schedule, with a number of variables, and components with long lead times.

ID		Task Name	Duration	Start	Finish	Predecessors	Aug '15												Sep '15				Oct '15				Nov '15				Dec '15				Jan '16		
							12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20	27	3					
1		CONTRACT AWARD	0 days	Fri 12/4/15	Fri 12/4/15		<div>CONTRACT AWARD  12/4</div> <div>AUTHORIZATION TO PROCEED W/ SUBMITTALS  12/14</div> <div>PRECONSTRUCTION MEETING </div>																														
2		AUTHORIZATION TO PROCEED W/ SUBMITTALS	0 days	Mon 12/14/15	Mon 12/14/15																																
3		PRECONSTRUCTION MEETING	0 days	Thu 1/14/16	Thu 1/14/16																																
4		CPM SCHEDULE	20 days	Mon 12/14/15	Fri 1/8/16	2																															
5		TRAFFIC CONTROL PLAN	40 days	Mon 12/14/15	Fri 2/5/16	2																															
6		EPSC PLAN	40 days	Mon 12/14/15	Fri 2/5/16	2																															
7		ERECTION PLAN	40 days	Mon 12/14/15	Fri 2/5/16	2																															
8		TEMP STREAM RELOCATION	40 days	Mon 12/14/15	Fri 2/5/16	2																															
9		BRG/APPROACH GUARDRAIL SHOP DRAWING	40 days	Mon 12/14/15	Fri 2/5/16	2																															
10		CPM SCHEDULE REVIEW	15 days	Mon 1/11/16	Fri 1/29/16	4																															
11		CPM SCHEDULE RESUBMITTAL	5 days	Mon 2/1/16	Fri 2/5/16	10																															
12		TRAFFIC CONTROL PLAN REVIEW	10 days	Mon 2/8/16	Fri 2/19/16	5																															
13		EPSC PLAN REVIEW	10 days	Mon 2/8/16	Fri 2/19/16	6																															
14		ERECTION PLAN REVIEW	10 days	Mon 2/8/16	Fri 2/19/16	7																															
15		STREAM RELOCATION REVIEW	10 days	Mon 2/8/16	Fri 2/19/16	8																															
16		BRG /APPROACH GUARDRAIL REVIEW	10 days	Mon 2/8/16	Fri 2/19/16	9																															
17		BRG/APPROACH GUARDRAIL FABRICATION	40 days	Mon 2/22/16	Fri 4/15/16	16																															
18		PRECAST ABUT/NEXT BEAM SHOP DRAWINGS	45 days	Mon 12/14/15	Fri 2/12/16	2																															
19		PRECAST ABUT/NEXT BEAM REVIEW	20 days	Mon 2/15/16	Fri 3/11/16	18																															
20		PRECAST ABUT/NEXT BEAM RESUBMITTAL	10 days	Mon 3/14/16	Fri 3/25/16	19																															
21		PRECAST ABUT/NEXT BEAM FINAL REVIEW	10 days	Mon 3/28/16	Fri 4/8/16	20																															
22		PRECAST ABUT/NEXT BEAM FABRICATION	60 days	Mon 4/11/16	Tue 7/5/16	21																															
23		MOBILIZATION	5 days	Mon 4/11/16	Fri 4/15/16	22SS																															
24		EPSC PERIMETER CONTROLS	5 days	Mon 4/11/16	Fri 4/15/16	23SS																															
25		CLEAR & GRUB	5 days	Mon 4/11/16	Fri 4/15/16	24SS																															
26		TEMPORARY SHUTDOWN	49 days	Mon 4/18/16	Fri 6/24/16	25,12																															
27		CERTIFIED LETTER FOR "BCP"	0 days	Mon 6/20/16	Mon 6/20/16	26																															
28		RAPID SET TRIAL BATCH NOTICE	0 days	Mon 6/20/16	Mon 6/20/16	27FS+1 day																															
29		PRE-CLOSURE MEETING	0 days	Mon 6/27/16	Mon 6/27/16	27FS+6 days																															
30		RAPID SET CONC. MIX DESIGN	0 days	Wed 6/15/16	Wed 6/15/16	27FS-3 days																															
31		RAPID SET TRIAL BATCH	0 days	Wed 6/29/16	Wed 6/29/16	29FS+2 days,30FS-10 days																															
32		PRE-EXCAVATION PILES ABUT #2	7 days	Mon 6/27/16	Wed 7/6/16	26																															
33		DRIVE PILES ABUT #1	7 days	Mon 6/27/16	Wed 7/6/16	32SS																															
34		INSTALL PILES ABUT #2	7 days	Thu 7/7/16	Fri 7/15/16	33																															
35		BRIDGE/BAT INSPECTION	5 days	Thu 6/30/16	Thu 7/7/16	32SS+3 days																															
36		BEGIN BRIDGE CLOSURE PERIOD	0 days	Mon 7/11/16	Mon 7/11/16	27FS+15 days,22,35																															
37		REMOVE EXISTING BRG & GUARD RAIL	4 hrs	Mon 7/11/16	Mon 7/11/16	36																															
<div>Project: Clarendon BRO 1443(4 Date: Tue 2/9/16</div>							Task  Inactive Task  Manual Summary Rollup  External Milestone  Manual Progress																														
							Split  Inactive Milestone  Manual Summary  Deadline																														
							Milestone  Inactive Summary  Start-only  Critical																														
							Summary  Manual Task  Finish-only  Critical Split																														
							Project Summary  Duration-only  External Tasks  Progress																														
Page 1																																					

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors	Aug '15				Sep '15		Oct '15			Nov '15			Dec '15			Jan '16				
								12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22
38			REMOVE EXISTING SUPERSTRUCTURE	12 hrs	Mon 7/11/16	Tue 7/12/16	37																				
39			UNCLASS. EXCAV. ABUT #1	9 hrs	Tue 7/12/16	Wed 7/13/16	38																				
40			COMMON/STRUCTURE EXCAV. ABUT #1	12 hrs	Wed 7/13/16	Thu 7/14/16	39																				
41			FINE GRADE CUT PILES ABUT #1	6 hrs	Thu 7/14/16	Thu 7/14/16	40																				
42			UNCLASS. EXCAV. ABUT #2	9 hrs	Thu 7/14/16	Thu 7/14/16	41SS																				
43			CPMMON/STRUCTURE EXCAV. ABUT #2	12 hrs	Thu 7/14/16	Fri 7/15/16	42																				
44			FINE GRADE CUT PILES ABUT #2	6 hrs	Fri 7/15/16	Fri 7/15/16	43FF																				
45			STREAM RELOCATION PHASE I	4 hrs	Tue 7/12/16	Tue 7/12/16	38																				
46			UNCLASS.EXCAV. STREAM PHASE I	6 hrs	Tue 7/12/16	Wed 7/13/16	45																				
47			STREAM BED MATERIAL PHASE I	4 hrs	Wed 7/13/16	Wed 7/13/16	46																				
48			STREAM RELOCATION PHASE II	4 hrs	Wed 7/13/16	Wed 7/13/16	47																				
49			UNCLASS. EXCAV. STREAM PHASE II	6 hrs	Wed 7/13/16	Thu 7/14/16	48																				
50			STREAM BED MATERIAL PHASE II	4 hrs	Thu 7/14/16	Thu 7/14/16	49																				
51			STONE FILL TYPE III ABUT #1	12 hrs	Thu 7/14/16	Fri 7/15/16	50																				
52			STONE FILL TYPE III ABUT #2	12 hrs	Fri 7/15/16	Sat 7/16/16	51																				
53			SET PRECAST ABUT #1	6 hrs	Fri 7/15/16	Sat 7/16/16	51																				
54			RAPID SET CONC. ABUT #1	6 hrs	Sat 7/16/16	Sat 7/16/16	53																				
55			RAPID SET CONC. CURE ABUT #1	72 hrs	Sat 7/16/16	Tue 7/19/16	54																				
56			INTIAL BF ABUT #1/CRANE PAD	6 hrs	Tue 7/19/16	Wed 7/20/16	55																				
57			SET PRCAST ABUT #2	6 hrs	Fri 7/15/16	Sat 7/16/16	44																				
58			RAPID SET CONC. ABUT #2	6 hrs	Sat 7/16/16	Sat 7/16/16	57																				
59			RAPID SET CONC. CURE ABUT #2	72 hrs	Sat 7/16/16	Tue 7/19/16	58																				
60			INTIAL BF ABUT #2/CRANE PAD	6 hrs	Tue 7/19/16	Wed 7/20/16	59																				
61			SET SHORING FOR SUPERSTRUCTURE	6 hrs	Wed 7/20/16	Wed 7/20/16	60																				
62			SET NEXT BEAMS	6 hrs	Wed 7/20/16	Thu 7/21/16	61,56																				
63			FORM/REBAR CURTAIN WALL ABUT #1	12 hrs	Thu 7/21/16	Fri 7/22/16	62																				
64			FORM/REBAR CURTAIN WALL ABUT #2	12 hrs	Fri 7/22/16	Sat 7/23/16	63																				
65			RAPID SET CLOSURE POUR	6 hrs	Sat 7/23/16	Sat 7/23/16	64																				
66			RAPID SET CONC. CLOSURE CURE	72 hrs	Sat 7/23/16	Tue 7/26/16	65																				
67			FORM/REBAR BRG RAIL STA. RT	12 hrs	Mon 7/25/16	Tue 7/26/16	66SS+1 hr																				
68			FORM/REBAR BRG RAIL STA. LT	12 hrs	Tue 7/26/16	Wed 7/27/16	67																				
69			POUR BRG RAIL	6 hrs	Wed 7/27/16	Thu 7/28/16	68FS+6 hrs,78FF																				
70			CONCRETE CURE	168 hrs	Thu 7/28/16	Thu 8/4/16	69																				
71			COMMON EXACV./SAND/DGCS ABUT #1	12 hrs	Thu 7/21/16	Fri 7/22/16	62																				
72			COMMON EXCAV./SAND/DGCS ABUT #2	12 hrs	Fri 7/22/16	Sat 7/23/16	71																				
73			STONE FILL TYPE III STA. RT/LT OF ABUT. #1	8 hrs	Sat 7/23/16	Mon 7/25/16	72																				
74			18" DRAINAGE CULVERT	6 hrs	Mon 7/25/16	Mon 7/25/16	73																				

Project: Clarendon BRO 1443(4  
Date: Tue 2/9/16

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Critical

Critical Split

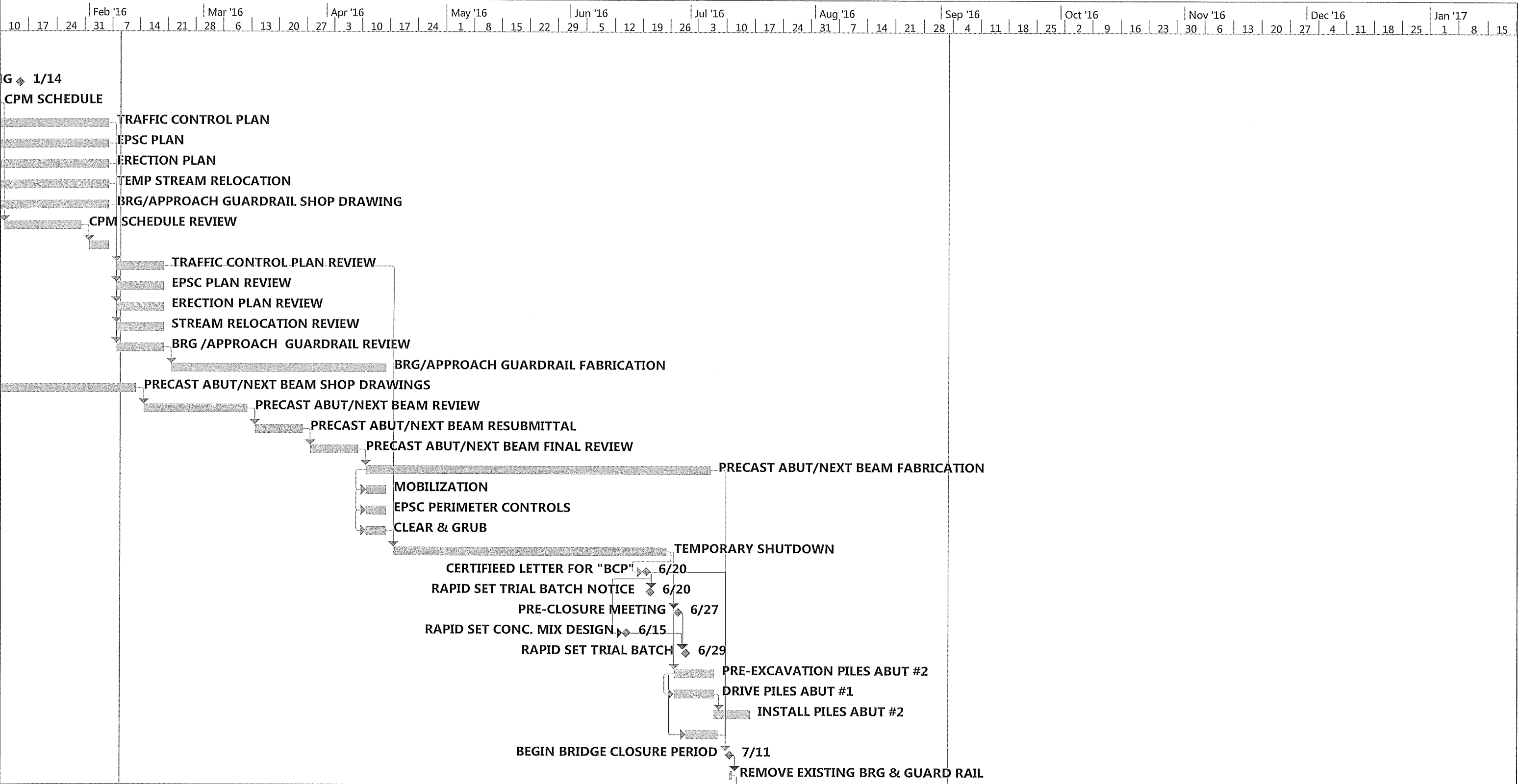
Progress

Manual Progress

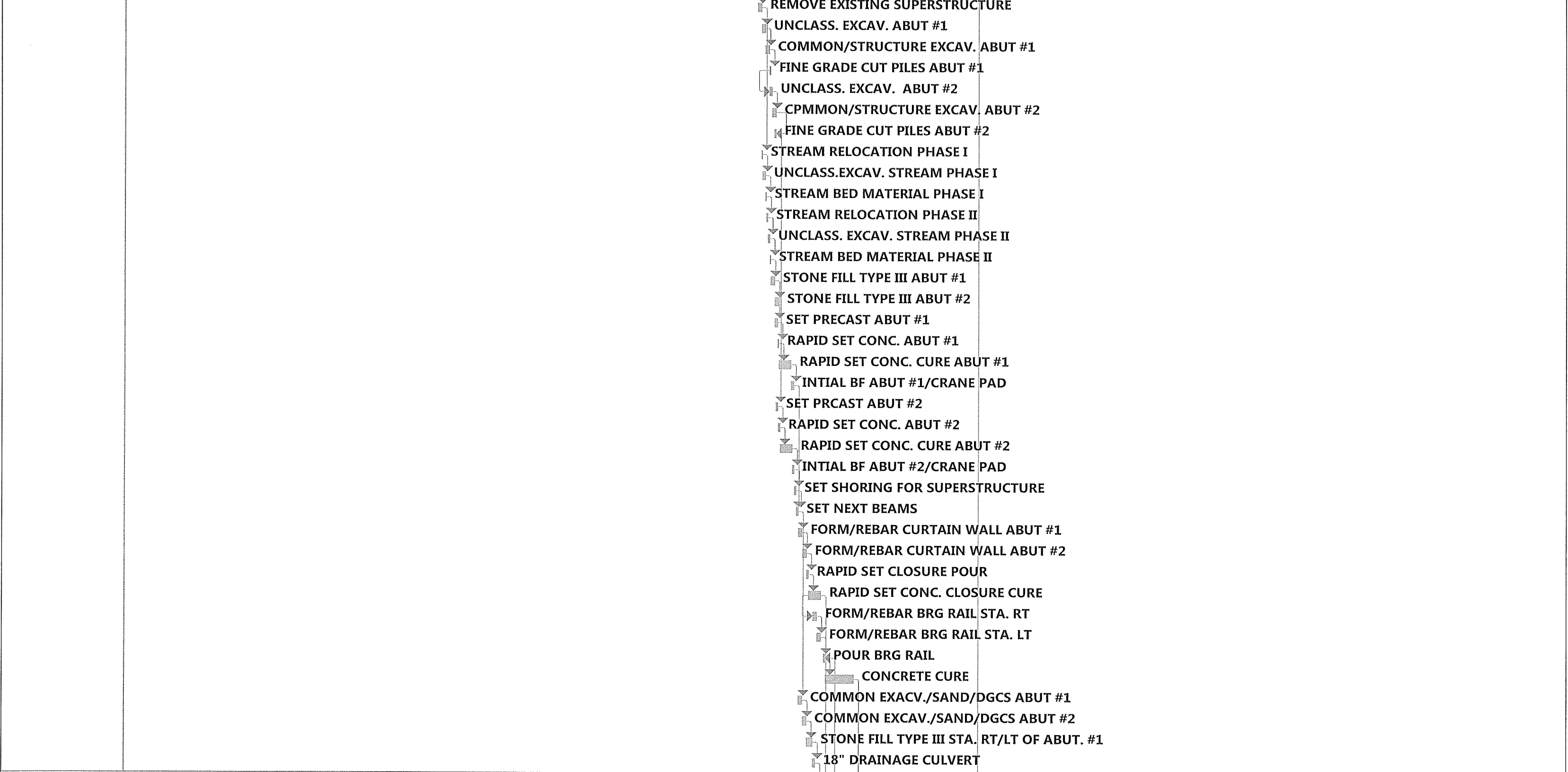
Page 2



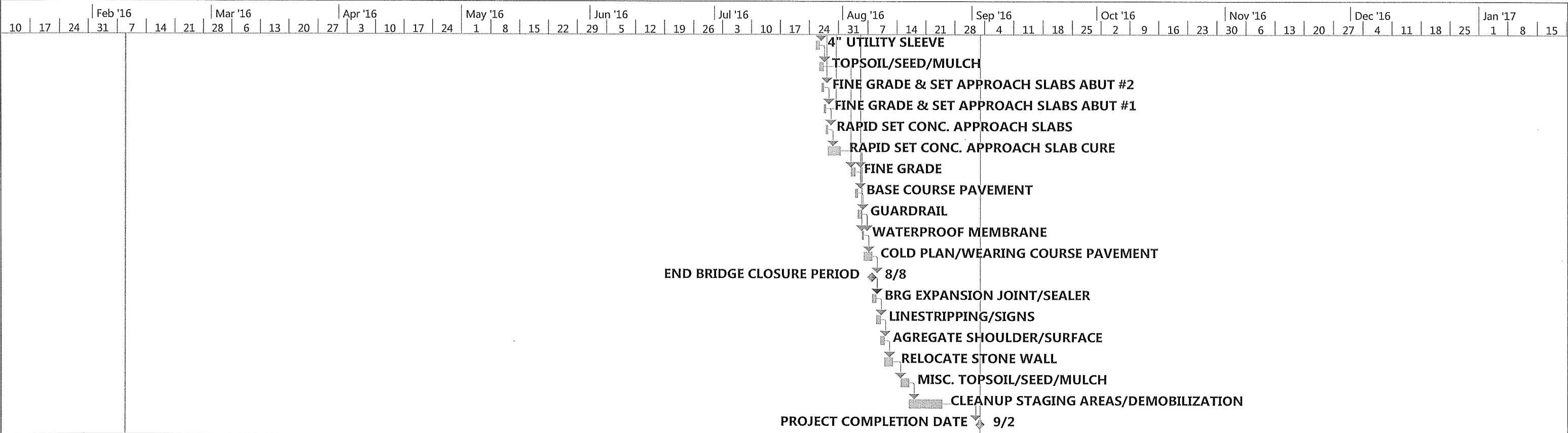
ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors	Aug '15				Sep '15				Oct '15				Nov '15				Dec '15				Jan '16			
								12	19	26	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	20
75			4" UTILITY SLEEVE	8 hrs	Mon 7/25/16	Tue 7/26/16	74																								
76			TOPSOIL/SEED/MULCH	12 hrs	Tue 7/26/16	Wed 7/27/16	75																								
77			FINE GRADE & SET APPROACH SLABS ABUT #2	6 hrs	Tue 7/26/16	Wed 7/27/16	66																								
78			FINE GRADE & SET APPROACH SLABS ABUT #1	6 hrs	Wed 7/27/16	Wed 7/27/16	77																								
79			RAPID SET CONC. APPROACH SLABS	6 hrs	Wed 7/27/16	Thu 7/28/16	78																								
80			RAPID SET CONC. APPROACH SLAB CURE	72 hrs	Thu 7/28/16	Sun 7/31/16	79																								
81			FINE GRADE	12 hrs	Wed 8/3/16	Thu 8/4/16	70FS-12 hrs,76																								
82			BASE COURSE PAVEMENT	6 hrs	Thu 8/4/16	Thu 8/4/16	70,81																								
83			GUARDRAIL	12 hrs	Thu 8/4/16	Fri 8/5/16	82																								
84			WATERPROOF MEMBRANE	7 hrs	Fri 8/5/16	Sat 8/6/16	83,80																								
85			COLD PLAN/WEARING COURSE PAVEMENT	12 hrs	Sat 8/6/16	Mon 8/8/16	84																								
86			END BRIDGE CLOSURE PERIOD	0 days	Mon 8/8/16	Mon 8/8/16	85																								
87			BRG EXPANSION JOINT/SEALER	1 day	Mon 8/8/16	Mon 8/8/16	86																								
88			LINESTRIPPING/SIGNS	1 day	Tue 8/9/16	Tue 8/9/16	87																								
89			AGREGATE SHOULDER/SURFACE	1 day	Wed 8/10/16	Wed 8/10/16	88																								
90			RELOCATE STONE WALL	2 days	Thu 8/11/16	Fri 8/12/16	89																								
91			MISC. TOPSOIL/SEED/MULCH	2 days	Mon 8/15/16	Tue 8/16/16	90																								
92			CLEANUP STAGING AREAS/DEMOBILIZATION	6 days	Wed 8/17/16	Wed 8/24/16	91																								
93			PROJECT COMPLETION DATE	0 days	Fri 9/2/16	Fri 9/2/16	92FS+8 days																								
Project: Clarendon BRO 1443(4 Date: Tue 2/9/16			Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress																				
			Split		Inactive Milestone		Manual Summary		Deadline																						
			Milestone		Inactive Summary		Start-only		Critical																						
			Summary		Manual Task		Finish-only		Critical Split																						
			Project Summary		Duration-only		External Tasks		Progress																						
Page 3																															



Project: Clarendon BRO 1443(4 Date: Tue 2/9/16	Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress	
	Split		Inactive Milestone		Manual Summary		Deadline			
	Milestone		Inactive Summary		Start-only		Critical			
	Summary		Manual Task		Finish-only		Critical Split			
	Project Summary		Duration-only		External Tasks		Progress			



Project: Clarendon BRO 1443(4 Date: Tue 2/9/16	Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress
	Split		Inactive Milestone		Manual Summary		Deadline		
	Milestone		Inactive Summary		Start-only		Critical		
	Summary		Manual Task		Finish-only		Critical Split		
	Project Summary		Duration-only		External Tasks		Progress		



Project: Clarendon BRO 1443(4 Date: Tue 2/9/16	Task		Inactive Task		Manual Summary Rollup		External Milestone		Manual Progress
	Split		Inactive Milestone		Manual Summary		Deadline		
	Milestone		Inactive Summary		Start-only		Critical		
	Summary		Manual Task		Finish-only		Critical Split		
	Project Summary		Duration-only		External Tasks		Progress		